Course syllabus for

Technical aspects of hearing aids, 7.5 credits

Hörapparatteknik, 7.5 hp
This course syllabus is valid from spring 2014.
Please note that the course syllabus is available in the following versions:
Autumn2009 , Spring2012 , Spring2013 , Spring2014 , Spring2015 , Spring2016 , Spring2018 , Spring2019 , Spring2020 , Spring2023 , Spring2024

Course code	1AU015
Course name	Technical aspects of hearing aids
Credits	7.5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Audiology
Level	G2 - First cycle 2
Grading scale	Pass, Fail
Department	Department of Clinical Science, Intervention and Technology
Decided by	Programnämnden för Audionomprogrammet
Decision date	2009-05-15
Revised by	Programme Committee 4
Last revision	2013-11-04
Course syllabus valid from	Spring 2014

Specific entry requirements

Admission to the course requires that the student has completed at least 45 credits from semester 1-2, with passing grades in Part 1 and 2 from the course Hearing assessment 1.

Objectives

The general aims of the course are that the student should acquire basic knowledge about the design of hearing aids and function as a preparation for future courses in hearing rehabilitation.

The expected learning outcomes of the course
After completing the course, the student should be able to
- account for and explain non-linear and linear signal processing electroacoustic systems and be able to distinguish the systems from one another both theoretically and through interpretation of measurements,
- describe and account for the components in different hearing aid styles and explain how these interact in an electroacoustic system
- describe and account for the technical function of different assistive listening devices
- independently be able to carry out measurements of the electroacoustic properties of hearing aids by

means of measurements in measuring tool (coupler) and be able to describe and interpret the results of these measurements.

Content

The following parts are included:

Technical aspects of hearing aids, 6 hp The course deals with the hearing aid as a signal processing, electroacoustic system. Non-linear signal processing is in focus and is compared with linear systems. The settings and programming of the hearing aid, measurement of the electroacoustic characteristics of hearing aids, and different ways of describing the function of the hearing aid are treated. Different hearing aid styles and hearing aids configurations are covered. Also the technical function of other assistive listening devices are treated both such that can function as an alternative to the hearing aid and such that supplements the hearing aid. **Electroacoustic measurements, 1.5 hp** The electroacoustic characteristics of hearing aids are measured in laboratory sessions. The results of the measurements are interpreted and described in a written report. Test batteries for various types of hearing aids and signal processing are covered.

Teaching methods

Lectures, group work, laboratory sessions and demonstrations. Group work, laboratory sessions and demonstrations are compulsory.

In case of absence from compulsory part, the student is responsible for contacting the course director for complementary assignment.

The course director assesses how absence from compulsory education elements can be substituted. Before the student has participated in the compulsory parts or has replaced compulsory education, in accordance to the instructions of the course director, the final study results cannot be reported. Absence from a compulsory education element may lead to that the student can not recover the occasion until next time the course is given.

Examination

Part 1: Technical aspects of hearing aids, 6 HE credits
Written examination

Part 2: Electroacoustic measurements, 1.5 HE credits
Written laboratory report

For a Pass grade in the course, attendance at compulsory parts is also required.

For students who have not passed the regular examination, possibility for re-examination is offered at a total of five examinations, of which the three last in connection to the next occasion when the course is given. As an examination, the times are counted when the student has participated in the same test. Supplementary additions to a written assignment is counted as an examination.

Transitional provisions

Examination can take place according to an earlier literature list during a time of one year after the date when a renewal of the literature list has been made. Examination will be provided during a time of two years after a possible close-down of the course.

Other directives

Assessment criteria for examination, specific instructions for certain tasks and timetable with

specification of compulsory parts and list of responsible teachers may be found on Pingpong on the first day of the course.

Course evaluation will be carried out according to the guidelines that are established by the Board of Higher Education. The course evaluation is carried out both through a written course evaluation at the end of the course and through an oral course forum, at least once in connection with course, where students can state his opinions.

Literature and other teaching aids

Dillon, Harvey

Hearing aids

2nd ed. : Sydney : Boomerang Press, c2012. - xvi, 608 p.

ISBN:978-1-60406-810-8 LIBRIS-ID:13487753

Library search

Scientific articles and other materials may be added.

Speaks, Charles E

Introduction to sound : acoustics for the hearing and speech sciences

3. ed. : San Diego : Singular Pub. Group, c1999 - xiii, 316 p.

ISBN:1-56593-979-4 LIBRIS-ID:6364449

Library search

Rosen, Stuart.; Howell, Peter

Signals and systems for speech and hearing

2. ed. : Bingley : Emerald, 2011 - xvii, 364 p.

ISBN:978-1-84855-226-5 (hbk.) LIBRIS-ID:12037068

Library search